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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,004	01/05/2001	Anthony P. Shuber	EXT-048	4632

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EXAMINER
CHUNDURU, SURYAPRABHA

ART UNIT	PAPER NUMBER
1637	9

DATE MAILED: 02/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/755,004	Applicant(s) SHUBER, ANTHONY P.	
	Examiner Suryaprabha Chunduru	Art Unit 1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *10-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,17 and 18* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Applicant's election without traverse of claims 1-9 and 17-18 of Group I in Paper No. 8 is acknowledged.

2. The Information Disclosure Statement (Paper No.4) filed on June 14, 2001 has been entered.

3. The disclosure is objected because of the following informalities:

Claim 18 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claims 1 and 18 recite "determining integrity of.... nucleic acid" and "predetermined threshold" which is unclear and indefinite because it is unclear whether the phrase refers to intact DNA or infectious virons and it is unclear how the integrity of a nucleic acid is determined. While 'high-integrity' as defined on page 3 of the specification is not limited to high integrity but is open to any integrity. Further, it is unclear whether "predetermined threshold" refers to a reference standard or control DNA. Amendment of the claims to properly address the claim would obviate the rejection.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

a. Claims 1-6, 8 and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Chong et al. (J Clin Microbiol., Vol. 34(11) : 2728-2730, 1996).

With reference to the instant claims 1, 8 and 18, Chong et al. teach a method for detecting a Helicobacter pylori infection wherein the method comprises (i) determining an integrity of a helicobacter pylori nucleic acid (DNA) present in a patient sample by polymerase chain reaction and identifying the patient having current helicobacter pylori infection if the integrity of nucleic acid exceeds (positive amplification) predetermined threshold (negative sample or no amplification) (see page 2729, column 1, paragraph 1-2, Fig 1);

With reference to the instant claims 2-4, Chong et al. teach amplification of non-Helicobacter pylori nucleic acid (Escherichia coli nucleic acid) as a negative sample to compare with the positive samples (see page 2729, column 1, paragraph 1). Escherichia coli strains that are normal flora of the colon, is therefore not confined to patient samples alone.

With reference to the instant claims 5-6, Chong et al. teach that the method includes the patient sample as stool, blood, gastric specimens (see page 2728, column 1, paragraphs 2-3).

With reference to the instant claim 17, Chong et al. teach amplifying a first (at least 200 nucleotides), second (at least 400 nucleotides) and a third (at least 600 nucleotides) Helicobacter pylori nucleic acid and detecting the amplified first, second and third nucleic acids as an

indication of helicobacter pylori infection (see page 2729, column 1, paragraphs 1-2, and page 2730, column 1, paragraphs 1-2).

Thus, the disclosure of Chong et al. meets the limitations in the instant claims.

b. Claims 1-3, 5, 7-8 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al. (J Clin Pathol., Vol. 48: 662-666, 1995).

With reference to the instant claims 1, 8 and 18, Li et al. teach a method for detecting a Helicobacter pylori infection wherein the method comprises (i) determining an integrity of a helicobacter pylori nucleic acid (DNA) present in a patient sample by polymerase chain reaction and (ii) identifying the patient having current helicobacter pylori infection if the integrity of nucleic acid exceeds (positive amplification) predetermined threshold (negative sample or no amplification) (see page 663, column 1, paragraphs 2-6).

With reference to the instant claims 2-3, Li et al. teach amplification of non-Helicobacter pylori nucleic acid as a negative sample to compare with the positive samples (see page 662, column 2, paragraphs 2-3, and page 663, column 1, paragraphs 1-6 and page 664, column 2, paragraphs 2-3, Fig. 2).

With reference to the instant claims 5-6, Li et al. teach that the method includes the patient sample as saliva, and gastric specimens (see page 663, column 1, paragraphs 1-2).

Thus the disclosure of Li et al. meets the limitations in the instant claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong et al. (J Clin Microbiol., Vol. 34(11) : 2728-2730, 1996) and in view of Lapidus et al. (USPN. 6,143,529).

Chong et al. teach a method for detecting a Helicobacter pylori infection wherein the method comprises (i) determining an integrity of a helicobacter pylori nucleic acid (DNA) present in a patient sample by polymerase chain reaction and identifying the patient having current helicobacter pylori infection if the integrity of nucleic acid exceeds (positive amplification) predetermined threshold (negative sample or no amplification) (see page 2729, column 1, paragraph 1-2, Fig 1);

Chong et al. also teach amplification of non-Helicobacter pylori nucleic acid (Escherichia coli nucleic acid) as a negative sample to compare with the positive samples (see page 2729, column 1, paragraph 1). Escherichia coli strains that are normal flora of the colon, is therefore not confined to patient samples alone. Chong et al. further teach that the method includes the patient sample as stool, blood, gastric specimens (see page 2728, column 1, paragraphs 2-3). However, Chong et al. did not teach addition of ion chelator (at least 150mM) to the patient sample.

Lapidus et al. teach a method for improving sensitivity and specificity of obtaining nucleic acids from patient samples wherein Lapidus disclose that the method comprises adding EDTA, an ion chelator to the patient sample, at a concentration preferably at least 150mM (see column 7, lines 28-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the method of detecting helicobacter pylori nucleic acid as taught by Chong et al. with the method of adding EDTA as taught by Lapidus et al. because Chong et al. states that 'lack of a positive PCR result is very likely due to the presence of PCR inhibitors in stool specimenns' (see page 2730, column 1, lines 1-6). One potential form of inhibiting PCR inhibitors in stool specimens expressly motivated by Lapidus et al. is the use of EDTA, an ion chelator to enhance the yield of nucleic acid from stool samples. Further, selection of specific buffer concentration represents routine optimization with regard to reaction composition, which routine optimization parameters are explicitly recognized in Lapidus et al. As noted in *In re Aller*, 105 USPQ 233 at 235, More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. Routine optimization is not considered inventive and no evidence has been presented that the concentration of buffer selection performed was other than routine, that the products resulting from the optimization have any unexpected properties, or that the results should be considered unexpected in any way as compared to the closest prior art. An ordinary practitioner would have been motivated to combine the method of Chong et al. with the method of Lapidus et al. in order to achieve the expected advantage of a rapid and sensitive method for detecting Helicobacter pylori in clinical samples.

No claims are allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 703-305-1004. The examiner can normally be reached on 8.30A.M. - 4.30P.M, Mon - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 703-308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0294 for regular communications and - for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Suryaprabha Chunduru
February 7, 2002

JEFFREY FREDMAN
PRIMARY EXAMINER